CLAIMS

1. A method of controlling a polyphase, reversible, rotary electrical machine of the kind called an alternator-starter for a motor vehicle with a heat engine, the said machine being adapted to work either as an electrical generator – in an alternator mode – or as an electric
5   motor, the said machine comprising a rotor (4), a polyphase stator (8) carrying a plurality of windings, a command and control unit, which includes a rectifying and control bridge (201) associated with the rotary electrical machine and connected to the windings of the stator of the said machine, and means for following the angular position of the rotor, the said means including a target and sensors (52) for detecting the passage of the target and for
10   transmitting items of information to the command and control unit, characterised in that, starting from sensors of the linear type delivering signals of a sinusoidal type after reading the target, a summation of the signals delivered by the sensors is performed in a processing unit (300), by applying a coefficient to the sensors to create signals which are out of phase with each other and the number of which is equal to the number of sensors.

15   2. A method according to Claim 1, characterised in that the means for following the angular position of the rotor are of the magnetic type.

3. A method according to Claim 1, characterised in that the processing unit (300) includes comparators having inverting inputs (-) and non-inverting inputs (+), and in that the inverting inputs (-) of the comparators are used for negative coefficients (λ), and the non-
20   inverting inputs (+) of the comparators are used for positive coefficients (λ).

4. A method according to Claim 3, characterised in that the processing unit comprises a microcontroller (302) connected through electrical links (303) to a digital-analogue converter (304) which is itself connected to the comparators (305 to 307).

5. A method according to Claim 3, characterised in that the signals from the sensors are
25   compared in pairs in the comparators.

6. A method according to Claim 5, characterised in that the machine has three phases, and in that three sensors are provided, with one sensor per phase.

7. A method according to Claim 1, characterised in that for each out of phase signal, the sum of the coefficients is zero.